Operator Training

Interstitial Monitoring/Sump Sensors

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health
and Environmental Control

Pressurized Lines

Release detection regulations for piping state that there must be a method to look for the “big” leak (3.0 gallons per hour continuously) as well as the “little” leak (either 0.2 gallons per hour monthly or 0.1 gallons per hour yearly). Interstitial Monitoring can satisfy the requirement for the big leak as well as the little leak. However, most facilities will also have a line leak detector to look for the big leak.

Pressurized Lines

There are several ways to look for the big leak as well as the little leak:

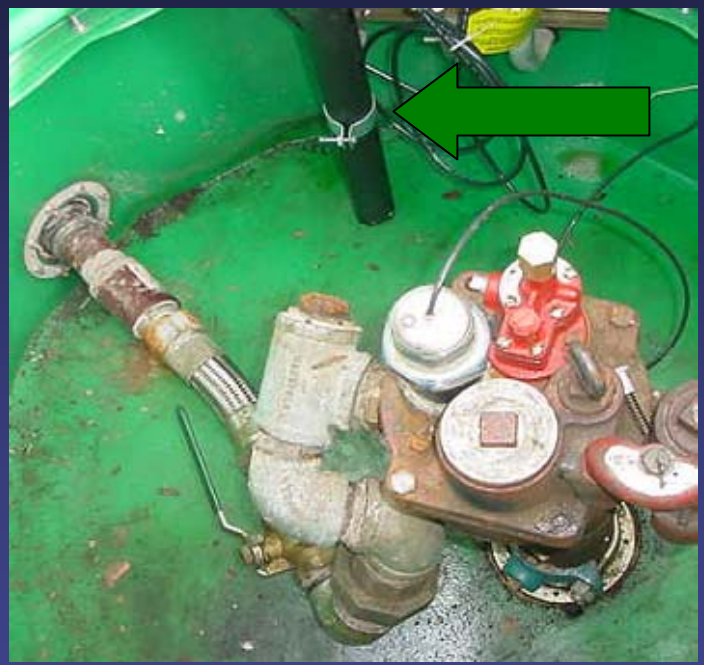
- Big Leak = 3.0 gallons per hour continuously
  - Mechanical Line Leak Detector (LLD)
  - Electronic Line Leak Detector (ELD)
- Little Leak = 0.2 gallons per hour monthly or 0.1 gallons per hour annually
  - Monthly Statistical Inventory Reconciliation (0.2 gph monthly)
  - Monthly Interstitial Monitoring (0.2 gph monthly)
  - Monthly monitoring with an Electronic Line Leak Detector (0.2 gph or 0.1 gph)
  - Annual Line Tightness Test (0.1 gph yearly)

Interstitial Monitoring

There are three ways that interstitial monitoring on piping can be accomplished:

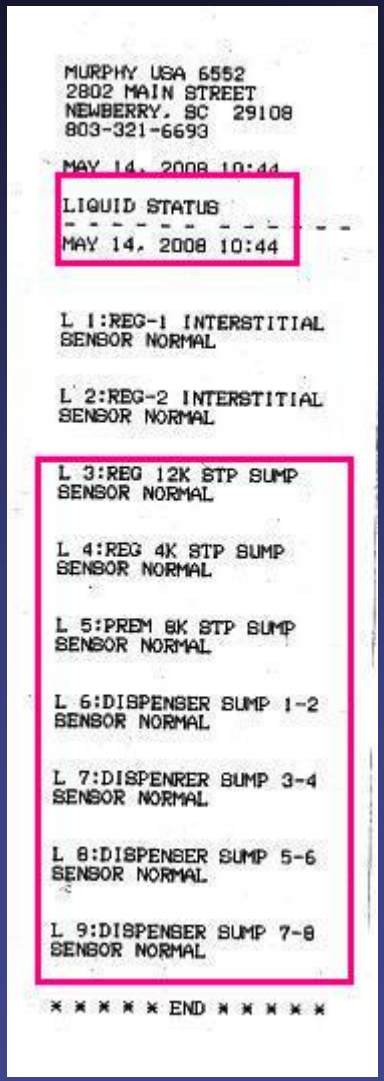
1. Sump sensors with an Automatic Tank Gauge and a leak detector
2. Monthly visual inspections and a leak detector
3. Sump sensors only

1. Interstitial Monitoring



Sump sensors with an Automatic Tank Gauge and leak detector is the most common form of interstitial monitoring. There must be sensors in all sumps that provide secondary containment, and they must be placed within one inch of the bottom of the sump in order to be able to detect a release of 0.2 gallons per hour.

1. Interstitial Monitoring



MURPHY USA 6552
2802 MAIN STREET
NEWBERRY, SC 29108
803-321-6693

MAY 14, 2008 10:44

LIQUID STATUS
MAY 14, 2008 10:44

L 1:REG-1 INTERSTITIAL
SENSOR NORMAL

L 2:REG-2 INTERSTITIAL
SENSOR NORMAL

L 3:REG 12K STP SUMP
SENSOR NORMAL

L 4:REG 4K STP SUMP
SENSOR NORMAL

L 5:PREM 8K STP SUMP
SENSOR NORMAL

L 6:DISPENSER SUMP 1-2
SENSOR NORMAL

L 7:DISPENRER SUMP 3-4
SENSOR NORMAL

L 8:DISPENSER SUMP 5-6
SENSOR NORMAL

L 9:DISPENSER SUMP 7-8
SENSOR NORMAL

* * * * * END * * * * *

These sensors are connected to an Automatic Tank Gauge which can store, collect, display, and print the status for the sump sensor. To meet the release detection requirement for piping, the tank gauge should record a “SENSOR NORMAL” report at least once a month, and twelve months of printed ATG slips should be kept on file at all times.

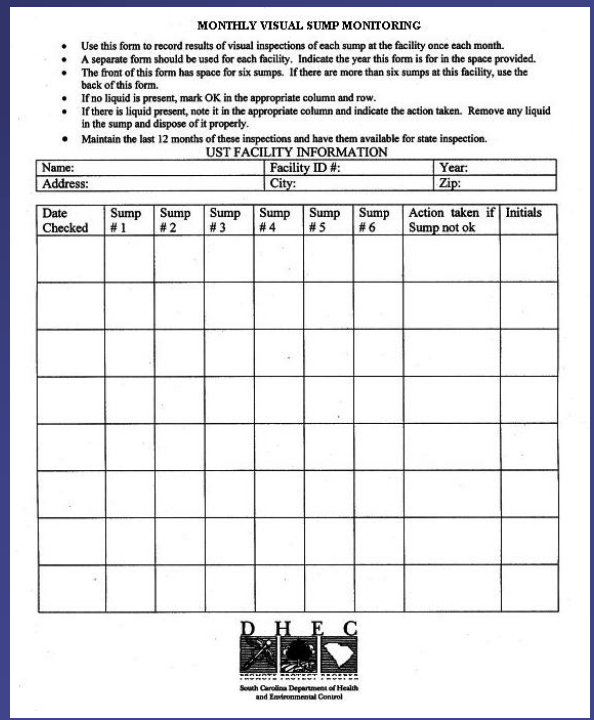
1. Interstitial Monitoring

Along with monthly monitoring, sump sensors are also required to have a third-party sump sensor function check be performed every 365 days. That means if the check was performed on September 1, 2009, the next check is due on or before September 1, 2010. Keep the results of this check with other release detection records for at least one year or until the next function check is performed.

Because a leak detector is used with this method, follow the instructions in the appropriate module.

2. Interstitial Monitoring

Monthly visual inspections are conducted by looking for liquid in all secondary containment sumps (submersible turbine pump sumps and dispenser sumps) on a monthly basis and recording the results. This should be done at least once a month and a written log should be kept stating that the sumps were clean or that they were cleaned out.



MONTHLY VISUAL SUMP MONITORING

- Use this form to record results of visual inspections of each sump at the facility once each month.
- A separate form should be used for each facility. Indicate the year this form is for in the space provided.
- The front of this form has space for six sumps. If there are more than six sumps at this facility, use the back of this form.
- If no liquid is present, mark OK in the appropriate column and row.
- If there is liquid present, note it in the appropriate column and indicate the action taken. Remove any liquid in the sump and dispose of it properly.
- Maintain the last 12 months of these inspections and have them available for state inspection.

UST FACILITY INFORMATION

Name:	Facility ID #:	Year:
Address:	City:	Zip:

Date Checked	Sump # 1	Sump # 2	Sump # 3	Sump # 4	Sump # 5	Sump # 6	Action taken if Sump not ok	Initials

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3. Interstitial Monitoring

In the past, a few facilities in the state were permitted with sump sensors as the only release detection method for lines. The sump sensor in this case must be able to detect both the small leak (0.2 gallon per hour) and the big leak (3.0 gallon per hour). These facilities must ensure the sump sensor is positioned within one inch of the bottom of the sump and that the sump is monitored visually once each month to verify the sensor is in place and not physically blocked or positioned so it cannot function. This type of monthly monitoring must also follow the requirements of Items 1 and 2.